Figure 1

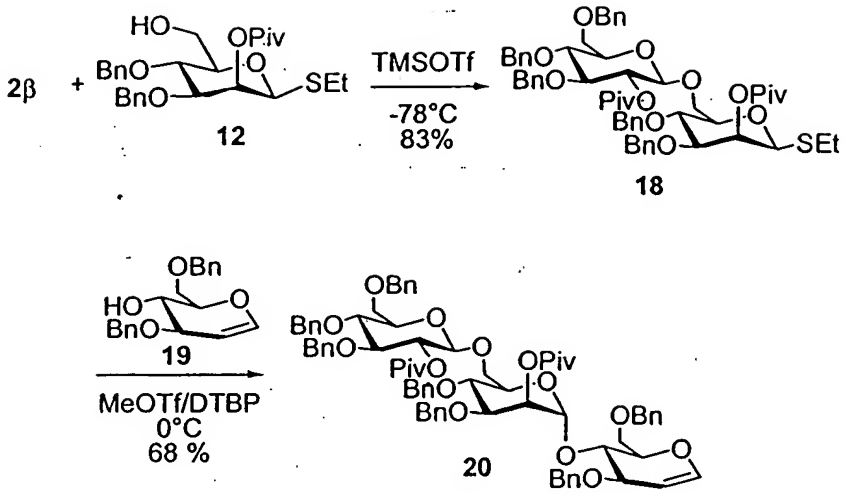
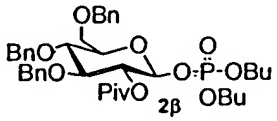
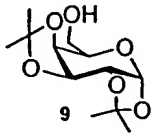
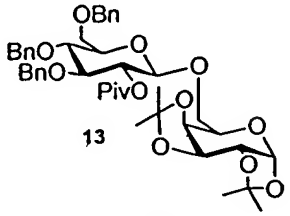
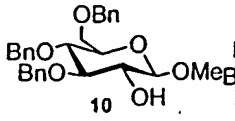
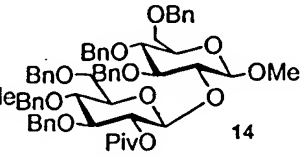
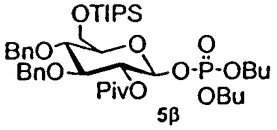
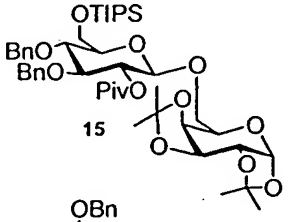
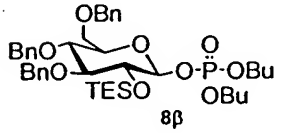
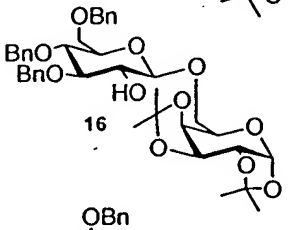
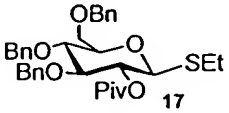
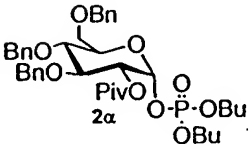

2β
HO
OPiv
BnO
BnO
SEt
12
TMSOTf
-78°C
83%
OBn
BnO
BnO
PivO
OPiv
BnO
BnO
SEt
18
OBn
HO
BnO
19
MeOTf/DTBP
0°C
68 %
OBn
BnO
BnO
PivO
OPiv
BnO
BnO
OBn
O
BnO
20

Figure 2

Table 2. Glycosylations Using Glycosyl Phosphates and Trimethylsilyltriflate.[a]

Entry	Glycosyl Donor	Glycosyl Acceptor	Product	Yield
1	 2β	 9	 13	94
2	2β	 10	 14	83
3	 5β	9	 15	82
4	 8β	9	 16	71
5	2β	 11	 17	90
6[b]	 2α	9	13	87
7[b]	2α	10	14	73
8[b]	2α	11	17	70

[a]Glycosylations were carried out with 1.2 equiv donor, 1.0 equiv acceptor and 1.2 equiv TMSOTf in dichloromethane at -78°C. [b]Reaction was carried out at -20°C.

Figure 3

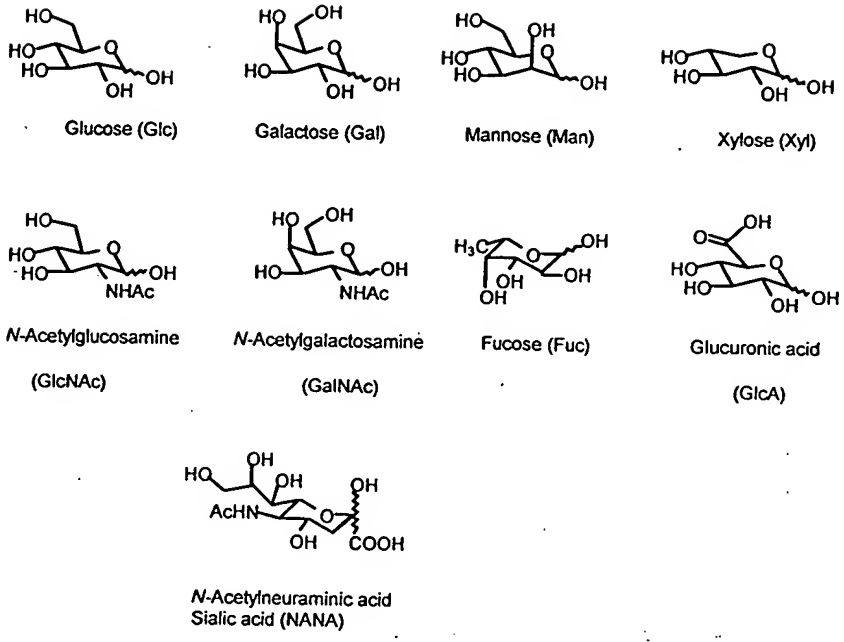
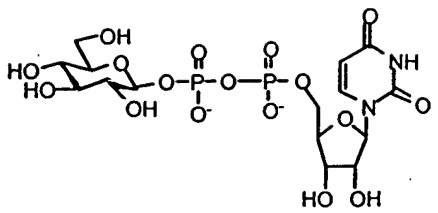
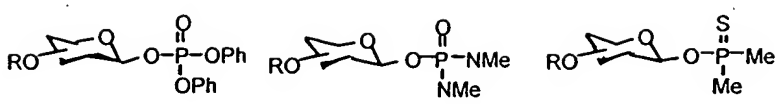

Glucose (Glc)
Galactose (Gal)
Mannose (Man)
Xylose (Xyl)
N-Acetylglucosamine
(GlcNAc)
N-Acetylgalactosamine
(GalNAc)
Fucose (Fuc)
Glucuronic acid
(GlcA)
N-Acetylneuraminic acid
Sialic acid (NANA)

Figure 4



UDP-Glucose

Figure 5



1 2 3

5

Figure 6

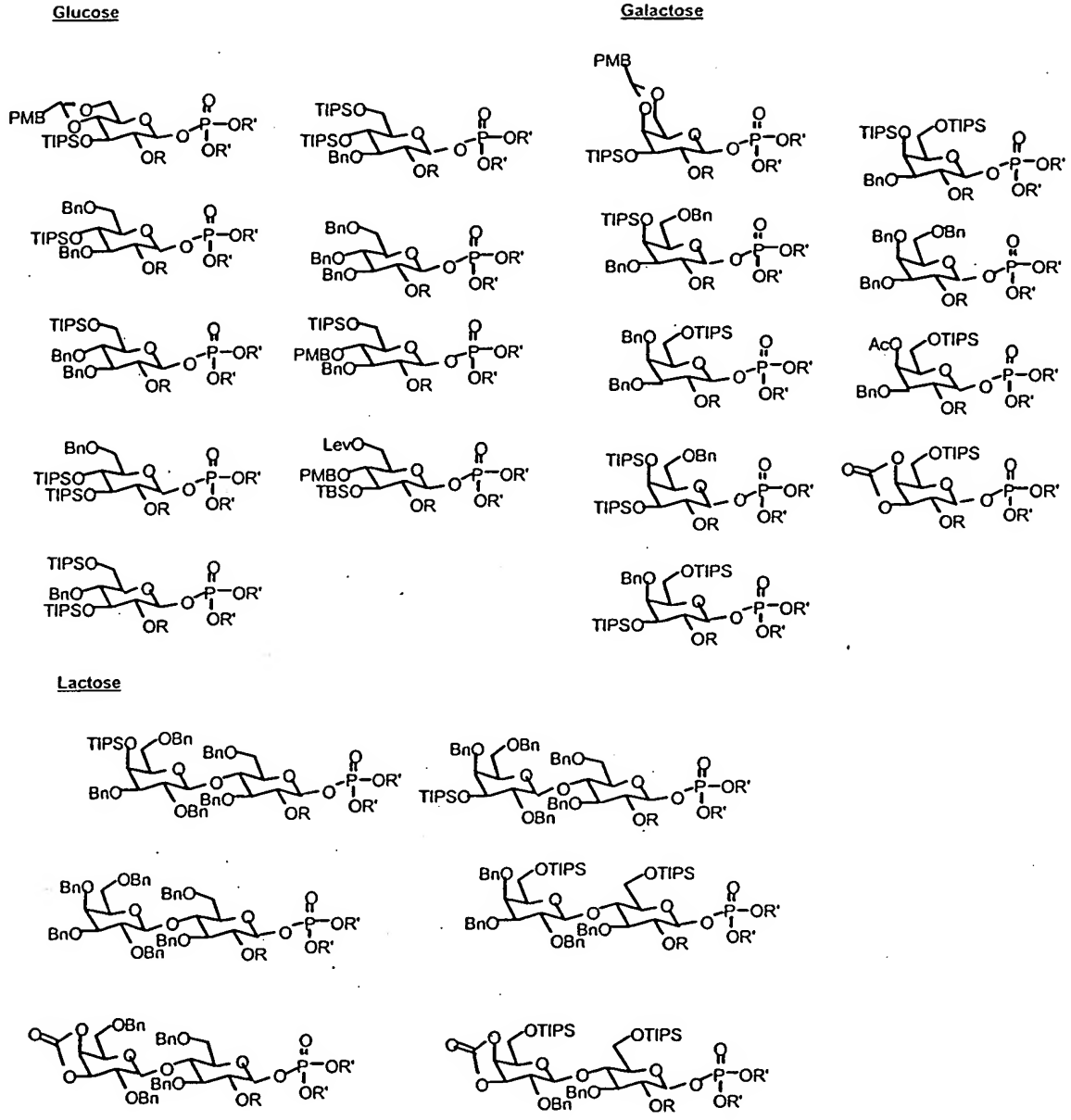

Glucose
Galactose
Lactose
PMB
TIPSO
BnO
OR
OR'
TBS
PMBO
LevO
AcO
OBn
OTIPS

Figure 7

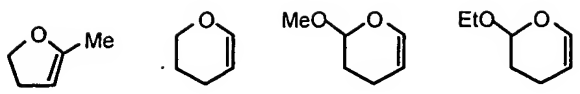


Figure 8

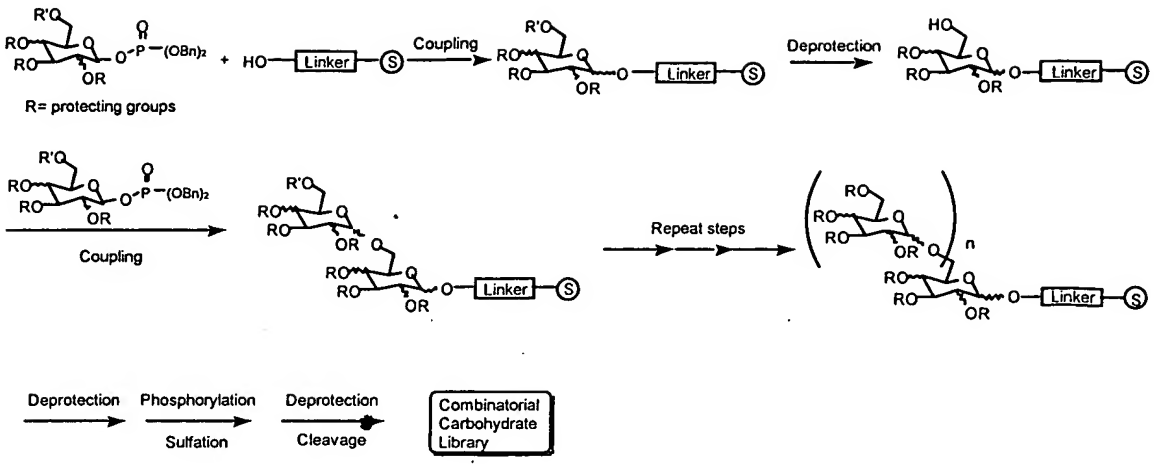
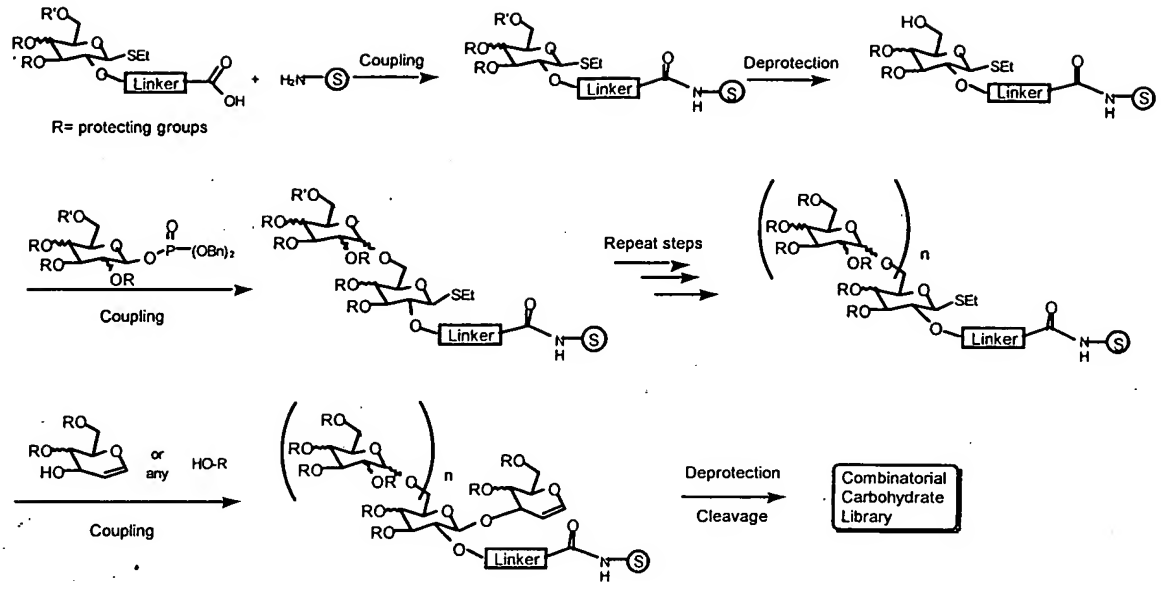

R'O
RO
RO
OR
O-P-(OBn)2
R= protecting groups
HO
Linker
S
Coupling
Deprotection
Repeat steps
n
Deprotection
Phosphorylation
Sulfation
Deprotection
Cleavage
Combinatorial Carbohydrate Library

Figure 9


R'O
RO
RO
SEt
Linker
OH
R= protecting groups
H2N
S
Coupling
Deprotection
HO
NH
OR
O-P-(OBn)2
Repeat steps
n
or
any
HO-R
Deprotection
Cleavage
Combinatorial
Carbohydrate
Library